

Python Programming - 2101CS405

Lab - 3

for and while loop

01) WAP to print 1 to 10

In [4]:

```
for i in range(1,11):  
    print(i,end=" ")
```

1 2 3 4 5 6 7 8 9 10

02) WAP to print 1 to n

In [8]:

```
n = input("Enter number")  
for i in range(1,int(n)+1):  
    print(i,sep=" ")
```

Enter number12

1
2
3
4
5
6
7
8
9
10
11
12

03) WAP to print odd numbers between 1 to n

In [11]:

```
n = int(input("Enter number"))  
for i in range(1,n+1):  
    if i%2!=0:  
        print(i)
```

Enter number12

1
3
5
7
9
11

04) WAP to print numbers between two given numbers which is divisible by 2 but not divisible by 3

In [15]:

```
num1 = int(input("Enter small number : "))
num2 = int(input("Enter large number : "))
for i in range(num1, num2+1):
    if i%2==0:
        if i%3!=0:
            print(i)
```

Enter small number : 20
Enter large number : 34
20
22
26
28
32
34

05) WAP to print sum of 1 to n numbers

In [14]:

```
n = int(input("Enter number"))
sum=0
for i in range(1, n+1):
    sum=sum+i
print("Sum of 1 to n is :", sum)
```

Enter number5
Sum of 1 to n is : 15

06) WAP to print sum of series 1 + 4 + 9 + 16 + 25 + 36 + ...n

In [16]:

```
import math
n = int(input("Enter number : "))
sum=0
for i in range(1, n+1):
    sum = sum + pow(i, 2)
print("Sum of 1 to n square is :", sum)
```

Enter number : 3
Sum of 1 to n square is : 14

07) WAP to print sum of series 1 – 2 + 3 – 4 + 5 – 6 + 7 ... n

In [17]:

```
n = int(input("Enter number"))
sum=0
for i in range(1, n+1):
    if i%2==0:
        sum = sum - i
    else:
        sum = sum + i
```

```
print("Sum of series : ",sum)
```

Enter number7

Sum of series : 4

08) WAP to print multiplication table of given number.

In [19]:

```
n = int(input("Enter number for multiplication table : "))
for i in range(1,11):
    print(n,"x",i,"=",n*i)
```

Enter number for multiplication table : 9

```
9 x 1 = 9
9 x 2 = 18
9 x 3 = 27
9 x 4 = 36
9 x 5 = 45
9 x 6 = 54
9 x 7 = 63
9 x 8 = 72
9 x 9 = 81
9 x 10 = 90
```

09) WAP to find factorial of the given number

In [23]:

```
num = int(input("Enter number for find factorial : "))
fac=1
for i in range(1,num+1):
    fac = fac * i
print("Factorial of number :",fac)
```

Enter number for find factorial : 5

Factorial of number : 120

10) WAP to find factors of the given number

In [26]:

```
num = int(input("Enter number : "))
print("Factor of",num,"is : ",end="")
for i in range(1,num+1):
    if num%i==0:
        print(i,end=",")
```

Enter number : 12

Factor of 12 is : 1,2,3,4,6,12,

11) WAP to find whether the given number is prime or not.

In [10]:

```
num = int(input("Enter number : "))
for i in range(2,int(num/2)+1):
    if num%i==0:
        print("Number is not prime")
        break
else:
    print("Number is prime")
```

Enter number : 10

Number is not prime

12) WAP to print sum of digits of given number

In [7]:

```
num = int(input("Enter number : "))
sum = 0
# for i in num:
#     sum = sum + int(i)
while num!=0:
    rem = num % 10
    sum = sum + rem
    num = num // 10
print("Sum of digit of number is :",sum)
```

Enter number : 126443
Sum of digit of number is : 20

13) WAP to check whether the given number is palindrome or not

In [49]:

```
num = int(input("Enter number : "))
temp = num
rev = 0
while temp!=0:
    rem = temp % 10
    rev = rev * 10 + rem
    temp = temp // 10

if rev==num:
    print("Number is palindrome")
else:
    print("Number is not palindrome")
```

Enter number : 3454545
Number is not palindrome

01) WAP to check whether the given number is Armstrong or not.

In [53]:

```
num = int(input("Enter number to check Armstrong or not : "))
temp = num
arm=0
while temp!=0:
    rem = temp % 10
    arm = arm + pow(rem,3)
    temp = temp // 10

if num==arm:
    print("Number is Armstrong")
else:
    print("Number is not Armstrong")
```

Enter number to check Armstrong or not : 153
Number is Armstrong

02) WAP to find out prime numbers between given two numbers.

In [63]:

```
num1 = int(input("Enter small number in positive: "))
num2 = int(input("Enter large number in positive : "))
flag = True
print("Prime number between {0} to {1} is :".format(num1,num2),end="")
```

```

if num1>0 and num2>0:
    for i in range(num1,num2+1):
        if i==1:
            continue
        for j in range(2,i//2+1):
            if i%j==0:
                flag = False
                break
        if flag==True:
            print(i,end=",")
        else:
            flag = True
else:
    print("Negative number is not valid")

```

Enter small number in positive: 1
Enter large number in positive : 50
Prime number between 1 to 50 is :2,3,5,7,11,13,17,19,23,29,31,37,41,43,47,

03) WAP to calculate x^y without using any function.

In [66]:

```

x = int(input("Enter base x : "))
y = int(input("Enter power y : "))
ans=1
for i in range(1,y+1):
    ans = ans * x
print("X^y is :",ans)

```

Enter base x : 3
Enter power y : 2
X^y is : 9

04) WAP to check whether the given number is perfect or not.

[Sum of factors including 1 excluding number itself]

In [4]:

```

num = int(input("Enter number : "))
sum = 0
for i in range(1,num):
    if num%i==0:
        sum = sum + i
if sum==num:
    print("Number is perfect")
else:
    print("Number is not perfect")

```

Enter number : 15
Number is not perfect

05) WAP to find the sum of $1 + (1+2) + (1+2+3) + (1+2+3+4)+...+(1+2+3+4+....+n)$

In [4]:

```

num = int(input("Enter number : "))
sum = 0
for i in range(1,num+1):
    for j in range(1,i+1):
        sum = sum + j
print("Sum of series is : {}".format(sum))

```

Enter number : 4
Sum of series is : 20

06) WAP to print Multiplication Table up to n

In [6]:

```
num = int(input("Enter number for multiplication table : "))
for i in range(1,num+1):
    for j in range(1,11):
        print("{0} x {1} = {2}".format(i,j,i*j))
    print()
```

Enter number for multiplication table : 5

```
1 x 1 = 1
1 x 2 = 2
1 x 3 = 3
1 x 4 = 4
1 x 5 = 5
1 x 6 = 6
1 x 7 = 7
1 x 8 = 8
1 x 9 = 9
1 x 10 = 10
```

```
2 x 1 = 2
2 x 2 = 4
2 x 3 = 6
2 x 4 = 8
2 x 5 = 10
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
2 x 10 = 20
```

```
3 x 1 = 3
3 x 2 = 6
3 x 3 = 9
3 x 4 = 12
3 x 5 = 15
3 x 6 = 18
3 x 7 = 21
3 x 8 = 24
3 x 9 = 27
3 x 10 = 30
```

```
4 x 1 = 4
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4 x 5 = 20
4 x 6 = 24
4 x 7 = 28
4 x 8 = 32
4 x 9 = 36
4 x 10 = 40
```

```
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
```

In []: